GREEN INITIATIVE

ENERGY SAVINGS

Heating and cooling commercial buildings typically accounts for forty percent of the total energy bill. When there is a variable frequency drive in place, energy consumption can be dramatically reduced by choosing a filter with a lower pressure drop. The less resistance a filter causes, the less work a motor needs to exert in order to maintain the required airflow. This results in a reduction in the motor's energy consumption. The fact that a filter's energy cost can make up to ninety percent of its total life cycle cost leads consumers to take a closer look at initial pressure drop when comparing filters, instead of concentrating on initial purchase price.

ENERGY SAVINGS CALCULATOR

$$Cp = \frac{CFM \times (5.2 \times ISP) \times (.746 \times Ce) \times T}{33{,}000 \times Ki}$$

MERV 11 Pleat
(2DYD7)

SC Pleat
(2W233)

Cp	Cost of energy during the life of the filter(s)
CFM	Volume of air to be filtered (ft.^{3}/min.)
ISP	Initial filter resistance (in w.g.)
Ce	Cost of power ($/kWh) - $0.0988 (National Avg. Jan 2011)
T	Duration of energy cost analysis period (1 yr=8760 hrs)
Ki	Motor and blower efficiency (%)
5.2	1 inch of water gauge, used to convert static pressure to working pressure and provide for inconsistencies in air mass
.746	The kilowatt equivalent of 1 horsepower
33,000	1 horsepower in pounds ft. 33,000 pounds moves 1ft=1hp

CALCULATED RESULTS

Filter Type	CFM (ft^3/min)	ISP (in w.g.)	Ce ($/kWh)	T (hrs)	Ki (%)	Cp ($/yr)
MERV 11 Pleat	2000	0.30	0.0988	8760	65.0%	$93.01
SC Pleat	2000	0.20	0.0988	8760	65.0%	$62.01

ANNUAL ENERGY COST OF OPERATION:

MERV 11 Pleat	$93.01
SC Pleat	$62.01

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